

What is Claimed is:

1. An interchangeable piezoelectric lighter, comprising:

a casing receiving a liquefied gas storage and having a switcher cavity provided therein;

5 a gas valve operatively extended from said liquefied gas storage for controlling a flow of gas;

a piezoelectric unit fitted in said casing for generating piezoelectricity;

10 an ignition button mounted to said casing in a movable manner, wherein said ignition button is arranged to compress said piezoelectric unit when said ignition button is depressed; and

15 a flame interchanging means for selectively interchanging a flame of said piezoelectric lighter, comprising a valve switcher movably received in said switcher cavity, wherein said valve switcher comprises at least two gas nozzles selectively and coaxially aligning with said gas valve for said flow of gas passing therethrough so as to produce different flames.

2. An interchangeable piezoelectric lighter, as recited in claim 1, wherein said flame interchangeable means further comprises a gas adapter fitted in said switcher cavity wherein said valve switcher is supported on said gas adapter and a gas emitter having an inlet end operatively extended from said gas valve and a gas releasing end 20 penetrated through said gas adapter so as to selectively align with one of said gas nozzles.

25 3. An interchangeable piezoelectric lighter, as recited in claim 2, wherein said valve switcher, which is adapted for coaxially rotating with respect to said gas adapter, comprises three gas nozzles which are a visible gas nozzle, a torch nozzle, and a windproof nozzle axially provided on said valve switcher respectively, so as to selectively align with said gas emitter, each of said three gas nozzles having a nozzle head appearing from a ceiling of said valve switcher and a gas inlet provided on a

bottom surface of said valve switcher and adapted for sealedly aligning with said gas releasing end of said gas emitter.

4. An interchangeable piezoelectric lighter, as recited in claim 2, wherein
said flame interchanging means further comprises a guiding unit for guiding said gas
5 emitter aligned with said respective gas nozzle wherein said guiding unit comprises at
least a protrusion upwardly provided on a top surface of said gas adapter and at least a
corresponding indentation formed on said bottom surface of said valve switcher in such a
manner that said protrusion is fittedly engaged with said indentation when said gas emitter
is aligned with one of said gas nozzles.

10 5. An interchangeable piezoelectric lighter, as recited in claim 3, wherein
said flame interchanging means further comprises a guiding unit for guiding said gas
emitter aligned with said respective gas nozzle wherein said guiding unit comprises at
least a protrusion upwardly provided on a top surface of said gas adapter and at least a
corresponding indentation formed on said bottom surface of said valve switcher in such a
15 manner that said protrusion is fittedly engaged with said indentation when said gas emitter
is aligned with one of said gas nozzles.

20 6. An interchangeable piezoelectric lighter, as recited in claim 2, further
comprising a supporting frame comprising a central shaft, upwardly extended from said
switcher cavity, for rotatably supporting said central shaft and a resilient element
coaxially mounted on said central shaft for applying an urging force against said gas
adapter, wherein said valve switcher has a center slot coaxially formed on said bottom
surface thereof and said gas adapter has a center through hole coaxially formed thereon in
such a manner that said central shaft is penetrated through said center through hole of
said gas adapter and rotatably inserted into said center slot of said valve switcher.

25 7. An interchangeable piezoelectric lighter, as recited in claim 3, further
comprising a supporting frame comprising a central shaft, upwardly extended from said
switcher cavity, for rotatably supporting said central shaft and a resilient element
coaxially mounted on said central shaft for applying an urging force against said gas
adapter, wherein said valve switcher has a center slot coaxially formed on said bottom
30 surface thereof and said gas adapter has a center through hole coaxially formed thereon in
such a manner that said central shaft is penetrated through said center through hole of
said gas adapter and rotatably inserted into said center slot of said valve switcher.

8. An interchangeable piezoelectric lighter, as recited in claim 5, further comprising a supporting frame comprising a central shaft, upwardly extended from said switcher cavity, for rotatably supporting said central shaft and a resilient element coaxially mounted on said central shaft for applying an urging force against said gas adapter, wherein said valve switcher has a center slot coaxially formed on said bottom surface thereof and said gas adapter has a center through hole coaxially formed thereon in such a manner that said central shaft is penetrated through said center through hole of said gas adapter and rotatably inserted into said center slot of said valve switcher.

9. An interchangeable piezoelectric lighter, as recited in claim 6, wherein
10 said resilient element is a compression spring having two ends biasing against a base of said central shaft and a bottom surface of said gas adapter, and wherein said resilient element normally urges and retains said gas adapter in a higher position that said top surface of said gas adapter is tightly contacted with said bottom surface of said valve switcher, so as to ensure said gas emitter sealedly aligned with said respective gas nozzle for gas transmitting therebetween.

10. An interchangeable piezoelectric lighter, as recited in claim 7, wherein
20 said resilient element is a compression spring having two ends biasing against a base of said central shaft and a bottom surface of said gas adapter, and wherein said resilient element normally urges and retains said gas adapter in a higher position that said top surface of said gas adapter is tightly contacted with said bottom surface of said valve switcher, so as to ensure said gas emitter sealedly aligned with said respective gas nozzle for gas transmitting therebetween.

11. An interchangeable piezoelectric lighter, as recited in claim 8, wherein
25 said resilient element is a compression spring having two ends biasing against a base of said central shaft and a bottom surface of said gas adapter, and wherein said resilient element normally urges and retains said gas adapter in a higher position that said top surface of said gas adapter is tightly contacted with said bottom surface of said valve switcher, so as to ensure said gas emitter sealedly aligned with said respective gas nozzle for gas transmitting therebetween.

30 12. An interchangeable piezoelectric lighter, as recited in claim 2, wherein
said valve switcher, which is movably supported on said gas adapter in a horizontally
movable manner, comprises two gas nozzles which are a visible nozzle and a torch flame

parallelly provided on said switcher respectively, so as to selectively align with said gas emitter, each of said two gas nozzles having a nozzle head appearing from a ceiling of said valve switcher and a gas inlet provided on a bottom surface of said valve switcher and adapted for sealedly aligning with said gas releasing end of said gas emitter.

5 13. An interchangeable piezoelectric lighter, as recited in claim 12, wherein
said flame interchanging means further comprises a guiding unit for guiding said gas
emitter aligned with said respective gas nozzle wherein said guiding unit comprises at
least a protrusion upwardly provided on a top surface of said gas adapter and at least a
10 corresponding indentation formed on said bottom surface of said valve switcher in such a
manner that said protrusion is fittedly engaged with said indentation when said gas emitter
is aligned with one of said gas nozzles.

15 14. An interchangeable piezoelectric lighter, as recited in claim 12, further
comprising a supporting frame comprising a central shaft, upwardly extended from said
switcher cavity, for rotatably supporting said central shaft and a resilient element
coaxially mounted on said central shaft for applying an urging force against said gas
adapter, wherein said valve switcher has an elongated guiding slot transversely formed on
said bottom surface thereof and said gas adapter has a center through hole coaxially
formed thereon in such a manner that said central shaft is penetrated through said center
through hole of said gas adapter and slidably inserted into said guiding slot of said valve
20 switcher.

25 15. An interchangeable piezoelectric lighter, as recited in claim 13, further
comprising a supporting frame comprising a central shaft, upwardly extended from said
switcher cavity, for rotatably supporting said central shaft and a resilient element
coaxially mounted on said central shaft for applying an urging force against said gas
adapter, wherein said valve switcher has an elongated guiding slot transversely formed on
said bottom surface thereof and said gas adapter has a center through hole coaxially
formed thereon in such a manner that said central shaft is penetrated through said center
through hole of said gas adapter and slidably inserted into said guiding slot of said valve
switcher.

30 16. An interchangeable piezoelectric lighter, as recited in claim 14, wherein
said has a predetermined length adapted for each of said gas nozzles coaxially aligning
with said gas emitter and for reinforcing a displacement of said valve switcher.

17. An interchangeable piezoelectric lighter, as recited in claim 15, wherein said has a predetermined length adapted for each of said gas nozzles coaxially aligning with said gas emitter and for reinforcing a displacement of said valve switcher.

18. An interchangeable piezoelectric lighter, as recited in claim 14, wherein
5 said resilient element is a compression spring having two ends biasing against a base of said central shaft and a bottom surface of said gas adapter, and wherein said resilient element normally urges and retains said gas adapter in a higher position that said top surface of said gas adapter is tightly contacted with said bottom surface of said valve switcher, so as to ensure said gas emitter sealedly aligned with said respective gas nozzle
10 for gas transmitting therebetween.

19. An interchangeable piezoelectric lighter, as recited in claim 15, wherein
said resilient element is a compression spring having two ends biasing against a base of
said central shaft and a bottom surface of said gas adapter, and wherein said resilient
element normally urges and retains said gas adapter in a higher position that said top
surface of said gas adapter is tightly contacted with said bottom surface of said valve
switcher, so as to ensure said gas emitter sealedly aligned with said respective gas nozzle
15 for gas transmitting therebetween.

20. An interchangeable piezoelectric lighter, as recited in claim 17, wherein
said resilient element is a compression spring having two ends biasing against a base of
said central shaft and a bottom surface of said gas adapter, and wherein said resilient
element normally urges and retains said gas adapter in a higher position that said top
surface of said gas adapter is tightly contacted with said bottom surface of said valve
switcher, so as to ensure said gas emitter sealedly aligned with said respective gas nozzle
20 for gas transmitting therebetween.